MODIS
SCIENCE DATA SUPPORT TEAM
PRESENTATION

February 5, 1993

AGENDA

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ACTION ITEMS:

06/12/92 [LLOYD CARPENTER]. Due Date: 02/12/93. Implement Microsoft Project for managing and scheduling MODIS SDST activities, including Level-1A and -1B schedules, Level-2 shell schedule, sizing of computer resource requirements, and overview. (Preliminary results are included in the handout.) STATUS: Open.

12/22/92 [LLOYD CARPENTER]. Due Date: 03/01/93. Survey the MODIS science team members to determine computer storage and processing requirements for Level-2 processing. (A preliminary list of questions for team members is included in the handout.) STATUS Open.

01/22/93 [AL FLEIG]: Due Date: 2/15/93. Write a memo to the project to change the MODIS duty cycle to 50% daytime, 50% nighttime. (The memo has been written. Lloyd Carpenter call Bill Barnes about a copy of a view graph showing the impact. (Bill Barnes is on travel until Monday, February 8, 1993.)) STATUS: Open.

1/22/93 [CARL SOLOMON]. Due Date: 2/12/93. Develop configuration management concepts suitable for application for MODIS Level-1 (etc.) software development; prepare alternatives and "cost/benefit" analyses. STATUS: Open.

1/22/93 [JIM STOREY]. Due Date: 2/22/93. Meet with EDOS, AM platform, and other groups; develop "cost/benefit" analyses; and provide recommendations for treatment of platform ancillary data (e.g., position, attitude). For example, do we incorporate position/attitude data into the Level-1A product or assign a pointer to it? Do we recommend that platform ancillary data be included in the MODIS instrument Level-0 data stream? STATUS Open.

1/22/93 [LLOYD CARPENTER/TOM GOFF]. Develop SDST-final draft of Level-1 requirements/assumptions. Due Date: (Initial draft due 2/15/93; iterate until 2/26/93; mail draft to MODIS, EOSDIS, and other parties for review by 3/1/93). STATUS: Open.

1/22/93 [PAUL HUBANKS/CARROLL HOOD]. Due Date: 2/19/93. Develop concepts for improving completeness of MAS metadata (anticipate the questions scientists might ask prior to ordering the data; e.g., identify clouds, snow/ice, etc.). STATUS: Open.

1/29/93 [ED MASUOKA]. Due Date: 2/12/93. Ask John Dalton how he wants to measure/specify processing requirements. STATUS: Open

MODIS Airborne Simulator (MAS) Status

Liam E. Gumley
Progress up to 4 February 1993

(1) MODIS Airborne Simulator Level-1B Data User's Guide

Work on this document is continuing. Sections include the following:

Introduction
Terms
MAS Specifications
MAS Spectral Bands
Calibration
    Visible/Near-Infrared
    Infrared
Geolocation
NetCDF format
    Description of NetCDF
    How to get NetCDF software
Level-1B tape format
Level-1B data structure
    Example NetCDF file header
    Explanation of contents of each variable
How to obtain Level-1B data
How to obtain quicklook and flight summary data
How to extract information from Level-1B NetCDF files
    Example source code
References

MAS Processing Status

Paul A. Hubanks
Progress through 04 February 1993

I have begun processing MAS flight data for 17 June 1992 on the LTP INDIGO. I have also provided some feedback to Liam on MAS Data Processing User's Guide. I will keep a log of suggested corrections and updates to this guide. Liam will update this document upon his return in March.

Liam relayed to me that the current calibration coefficients for ASTEX are not final. It is expected that Tom Arnold (VIS/NIR calibration) will have final ASTEX calibration coefficients later this month. Final reprocessing of ASTEX data will be delayed until that time. The processing of the 17 June 1992 flight will continue in order to gain familiarity with the software and procedures.

There is a potential problem in the navigation software for the upcoming TOGA-COARE experiment. The proximity of the Fiji Islands to 180 degrees longitude, causes some concern about flights traversing that meridian. If this occurs, there will be a discontinuity in longitudes from -179.9 to +180.0 (flying west to east). A software modification would be necessary to handle this situation.

Another possible area to improve the MAS software is in the critical straight-line flight track selection. Currently this is done through an iterative, interactive process using GNUPLOT and listing portions of the navigation file. Since start and end times are desired to the nearest hundredth of an hour and there are typically 10 to 15 straight-line tracks per flight, this process can be tedious and time-consuming. An automated procedure could be developed to list out "suggested" start and end times. It should be noted that due to the experimental nature of the MAS any "blind" use of an automated flight-track selection process would be foolhardy (since bad data points and data "dropouts" do occur). Output from an automated procedure could still be manually checked but with considerable savings in time and effort in locating detailed start and end times.

I spoke with Liam about a list of scientists who are likely to suggest potential enhancements to MAS Metadata. The list is : Michael King, Paul Menzel, Chris Justice, Yoram Kaufman (and Bocai Gao), and Jim Coakley. I plan on contacting these scientists for their input on MAS Metadata enhancement, Monday. I am also reviewing an MAS enhancement plan suggested by Carroll Hood, and one written by Liam Gumley in February 1992.

MODIS Level-2 Processing Shell Design and Development

J. J. Pan
MODIS Science Data Support Team
(301) 982-3700

Date: January 29 - February 4, 1993

1. Computer Storage and Processing Requirements for Level-2 Processing

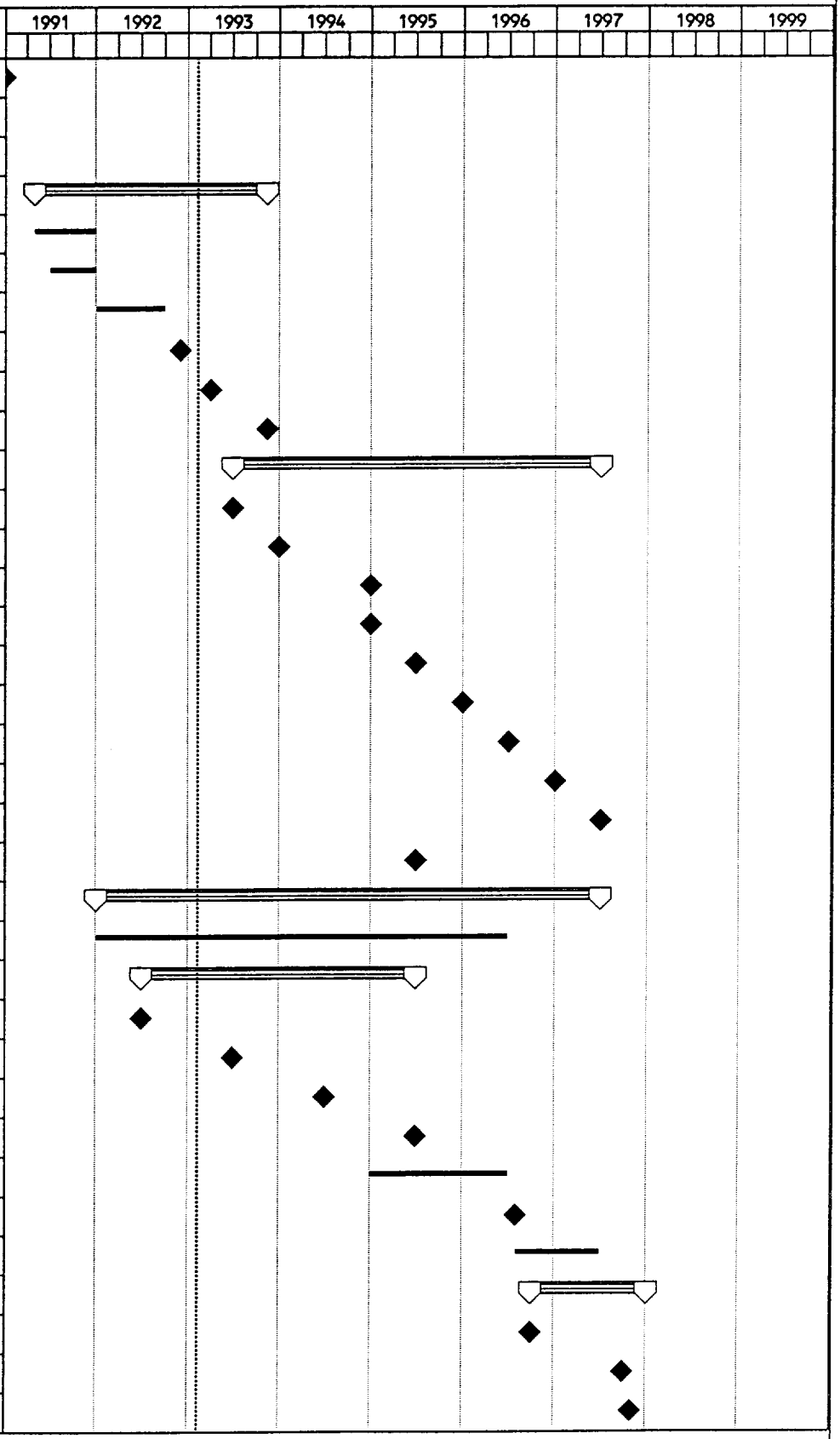
In order to estimate the data storage and processing requirements for Level-2 processing, Lloyd, Ruiming, and I are working together to design a survey table that will be used to estimate these requirements. In the meantime, through Ruiming's efforts, we have received two prototype codes from Dr. Strahler's group. Both of them are written in C. Liam Gumley also provided a copy of the Fortran code used for MAS data processing in Dr. King's group. Our current goals are to get familiar with the team members coding style, learn how to extract the information we need for storage and processing requirements, and explore any potential problems that could happen in the algorithms integration. PR:QA C and QA FORTRAN tools can provide some functions we need for this task.
We expect to use the PR:QA tools to speed up our work.

2. Algorithm Dependency Diagram

We have received a response from Dr. Tanre. However, we are still waiting for the corrections from several key team members. I am preparing the new diagram (Ver. 6.0) in which the products number will be replaced by the products name.

MODIS SDST MILESTONE CHART

ID	Name
1	EOSDIS (ECS) Milestone Chart
2	
3	
4	
5	interview team leaders/PIs
6	compile/analyse needs
7	review/revise study results
8	review with ECS contractor
9	review tool spec. developmen
10	review final specification
11	ECS SCHEDULE
12	SRR
13	PDR
14	CDR
15	SCF beta (toolkit delivery)
16	beta ECS release 1.1
17	PGS V1 (revised toolkit)
18	version 1 ECS release 3
19	PGS V2 (final AM toolkit)
20	version 2 ECS release 4
21	beta DAAC
22	SCIENCE S/W DEVELOPMENT SCHEDULE
23	develop V1 science S/W
24	review progress
25	review # 1
26	review # 2
27	review # 3
28	review # 4
29	test interfaces and portabil
30	deliver V1 science software
31	dev. & deliver V2 science s/
32	EOSDIS SCHEDULE
33	EOSDIS AM version 1
34	EOSDIS AM version 2 ATTR
35	AM ORR



Project: MODIS Milestones
File: MILES.MPP
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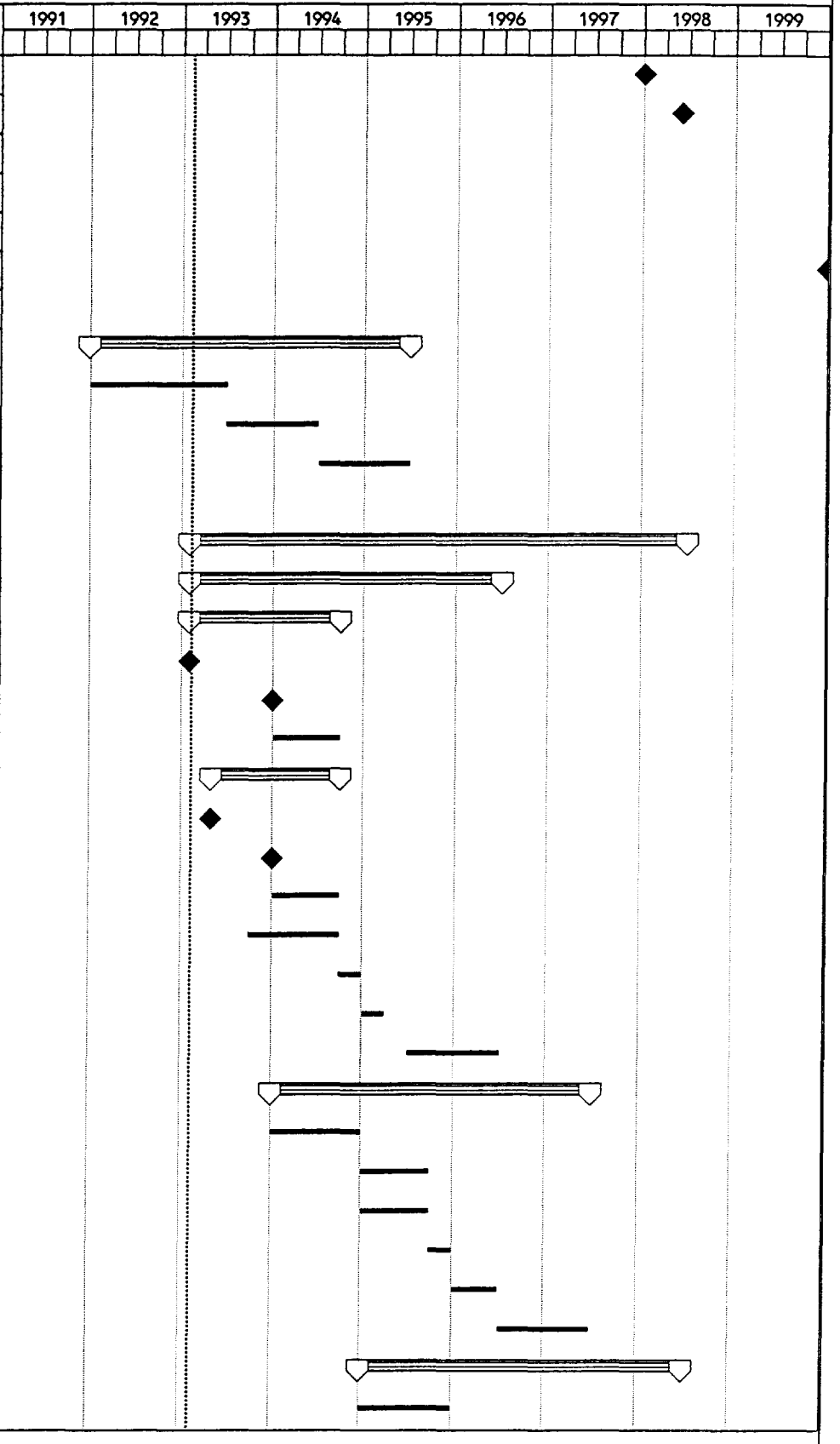
Critical — Progress — Summary
Noncritical — Milestone — Rolled Up

MODIS SDST MILESTONE CHART

ID	Name
36	EOSDIS AM launch ready
37	AM LAUNCH
38	
39	
40	
41	MODIS SDST Milestones
42	
43	coding recommendations
44	beta
45	version 1
46	version 2
47	
48	MODIS LEVEL-1
49	Level-1A &1B, beta version
50	level-1A development
51	PDR
52	CDR/coding
53	debugging/execution
54	level-1B development
55	PDR
56	CDR/coding
57	debugging/execution
58	test development
59	internal test
60	test with beta PGS toolk
61	test on PGS (handholding
62	Level-1A &1B, Version 1
63	development, CDR/coding
64	debugging/execution
65	test development
66	internal test
67	test with PGS V1 toolkit
68	test on PGS
69	Level-1A &1B, Version 2
70	development, CDR/coding



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File: MILES.MPP
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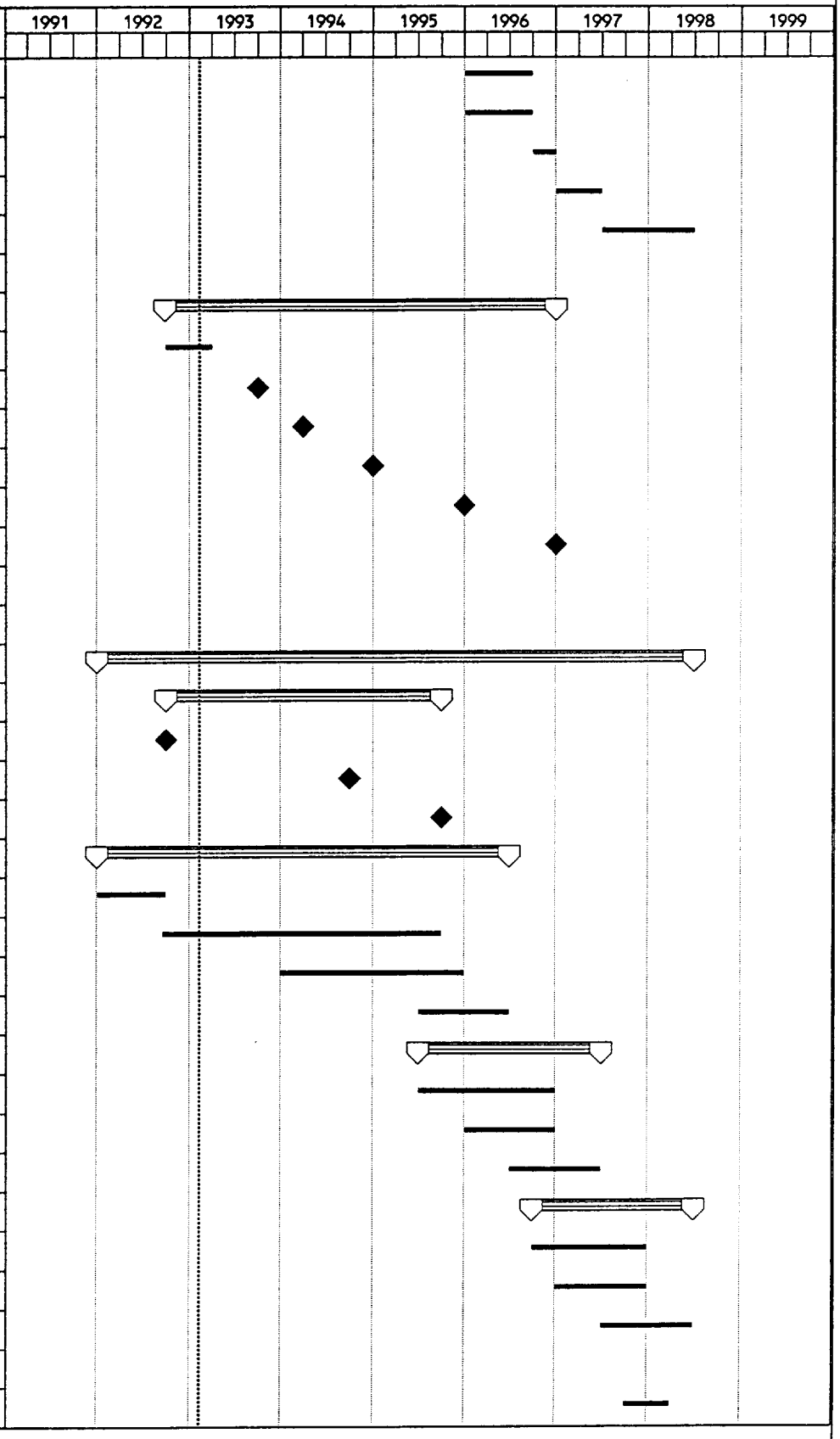
Critical — Progress — Summary
Noncritical — Milestone — Rolled Up

MODIS SDST MILESTONE CHART



ID	Name
71	debugging/execution
72	test development
73	internal test
74	test with PGS V2 toolkit
75	test on PGS
76	
77	LEVEL-2 to 4 Processing Shell
78	SRR
79	PDR
80	CDR
81	beta
82	version 1
83	version 2
84	
85	
86	SCIENCE ALGORITHMS
87	TM algorithm review
88	beta
89	version 1
90	version 2
91	TM beta version
92	coding concepts
93	TM code development
94	SDST integration
95	SDST deliver and test
96	TM version 1
97	code development
98	SDST integration
99	SDST deliver and test
100	TM version 2
101	code development
102	SDST integration
103	SDST deliver and test
104	
105	End-to-end test

Project: MODIS Milestones
File: MILES.MPP
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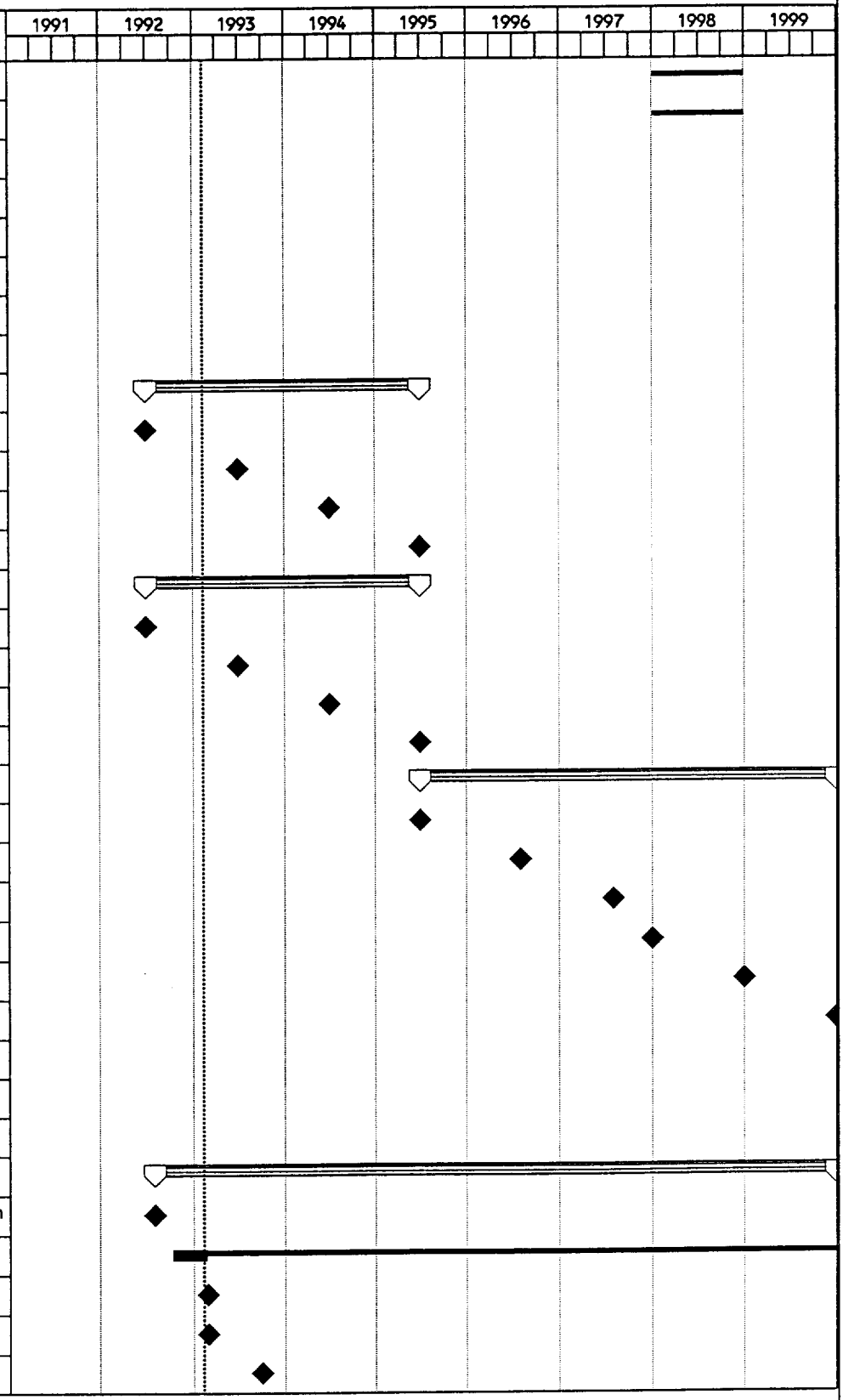
Critical — Progress — Summary
Noncritical — Milestone — Rolled Up

MODIS SDST MILESTONE CHART

ID	Name
106	First post launch development
107	SDST integration and test
108	
109	
110	
111	
112	EOS Project Deadlines
113	
114	Software & Data Management Plan
115	draft
116	revision
117	AM final
118	PM final
119	Science computing Facility Plan
120	draft
121	AM final
122	AM revision
123	PM final
124	Data Processing Software
125	beta version, AM-1
126	version 1, AM-1
127	version 2, AM-1
128	version 1, PM-1
129	version 2, PM-1
130	version 3, PM-1
131	
132	
133	
134	MODIS TLCF MILESTONES
135	TLCF delivery & installation
136	TLCF upgrades
137	Cadre's TeamWork
138	HP's SoftBench
139	CM tool installation



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Critical — Progress — Summary
Noncritical — Milestone — Rolled Up